

1 **CLAIMS**

2
3 1. A method comprising:
4 using a system definition model to design a system;
5 subsequently using the system definition model to deploy the system on
6 one or more computing devices; and
7 after deployment of the system, using the system definition model to
8 manage the system deployed on the one or more computing devices.

9
10 2. A method as recited in claim 1, wherein the system comprises an
11 application.

12
13 3. A method as recited in claim 1, wherein the system comprises an
14 environment.

15
16 4. A method as recited in claim 1, further comprising:
17 using knowledge obtained during management of the system to design a
18 subsequent version of the system.

19
20 5. A method as recited in claim 1, wherein the system definition model
21 includes knowledge describing how to deploy the system on the one or more
22 computing devices.

1 **6.** A method as recited in claim 1, wherein the system definition model
2 includes knowledge describing how to deploy the system on multiple different
3 computing devices, and wherein the knowledge includes different knowledge
4 describing how to deploy the system on each of the multiple different computing
5 devices.

6
7 **7.** A method as recited in claim 1, wherein the system definition model
8 includes constraints that must be satisfied by the one or more computing devices
9 in order for the system to be run on the one or more computing devices.

10
11 **8.** A method as recited in claim 7, wherein the system definition model
12 can be used to check whether the constraints are satisfied by the one or more
13 computing devices during design of the system.

14
15 **9.** A method as recited in claim 7, wherein the system definition model
16 can be used to check whether the constraints are satisfied by the one or more
17 computing devices during design of the system and during management of the
18 system.

19
20 **10.** A method as recited in claim 1, wherein the system definition model
21 includes knowledge describing how to manage the system after deployment of the
22 system.

1 **11.** A method as recited in claim 1, further comprising:
2 during management of the system, using a flow to automatically propagate
3 a configuration change to the system.

4
5 **12.** A method as recited in claim 1, wherein the system is deployed to an
6 environment on the one or more computing devices, the method further
7 comprising, prior to the design, deployment, and management of the system:

8 using another system definition model to design the environment;
9 subsequently using the other system definition model to deploy the
10 environment on the one or more computing devices; and
11 after deployment of the environment, using the other system definition
12 model to manage the environment deployed on the one or more computing
13 devices.

14
15 **13.** A method as recited in claim 12, wherein the system definition
16 model for the environment is derived through examination of the configuration of
17 one or more computing devices.

18
19 **14.** A method as recited in claim 12, wherein the system definition
20 model includes constraints that must be satisfied by the environment in order for
21 the system to be run on the one or more computing devices, and wherein the other
22 system definition model includes other constraints that must be satisfied by the
23 system in order for the system to be run on the one or more computing devices.

1 15. A method as recited in claim 1, wherein a plurality of environments
2 are deployed on the one or more computing devices, the method further
3 comprising:

4 using a plurality of different system definition models to design each of the
5 plurality of environments, wherein each of the plurality of environments is
6 associated with one of the plurality of different system definition models;

7 using, for each environment, the associated one of the plurality of different
8 system definition models to deploy the environment; and

9 after deployment, using, for each environment, the associated one of the
10 plurality of different system definition models to manage the environment.

11
12 16. A method as recited in claim 15, wherein each of the plurality of
13 environments is layered, and wherein each of the plurality of environments serves
14 as environment to one other of the plurality of environments or to the system.

15
16 17. One or more computer readable media having stored thereon a
17 plurality of instructions that implement a schema, wherein the plurality of
18 instructions, when executed by a processor, cause the processor to:

19 facilitate design of a system;

20 facilitate deployment of the system; and

21 facilitate management of the system.

22
23 18. One or more computer readable media as recited in claim 17,
24 wherein the system comprises an application.

1 **19.** One or more computer readable media as recited in claim 17,
2 wherein the system comprises an environment.

3
4 **20.** One or more computer readable media as recited in claim 17,
5 wherein to facilitate deployment of the system is to include, in a system definition
6 model, knowledge describing how to deploy the system.

7
8 **21.** One or more computer readable media as recited in claim 17,
9 wherein to facilitate deployment of the system is to include, in a system definition
10 model, knowledge describing how to deploy the system in multiple different
11 environments, and wherein the knowledge includes different knowledge
12 describing how to deploy the system in each of the multiple different
13 environments.

14
15 **22.** One or more computer readable media as recited in claim 17,
16 wherein to facilitate design of the system is to include, in a system definition
17 model, constraints that must be satisfied by an environment in order for the system
18 to be run in the environment.

19
20 **23.** One or more computer readable media as recited in claim 22,
21 wherein to facilitate design of the system is to use the system definition model to
22 check whether the constraints are satisfied by the environment during design of the
23 system.

24
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1 **24.** One or more computer readable media as recited in claim 17,
2 wherein to facilitate management of the system is to include, in a system definition
3 model, knowledge describing how to manage the system.

4
5 **25.** An apparatus that implements a schema comprising:
6 means for facilitating design of a system;
7 means for facilitating deployment of the system; and
8 means for facilitating management of the system.

9
10 **26.** An apparatus as recited in claim 25, wherein the means for
11 facilitating deployment of the system comprises means for including, in a system
12 definition model, knowledge describing how to deploy the system.

13
14 **27.** An apparatus as recited in claim 25, wherein the means for
15 facilitating deployment of the system comprises means for including, in a system
16 definition model, knowledge describing how to deploy the system in multiple
17 different environments, and wherein the knowledge includes different knowledge
18 describing how to deploy the system in each of the multiple different
19 environments.

20
21 **28.** An apparatus as recited in claim 25, wherein the means for
22 facilitating design of the system comprises means for including, in a system
23 definition model, constraints that must be satisfied by an environment in order for
24 the system to be run in the environment.

1 **29.** An apparatus as recited in claim 28, wherein the means for
2 facilitating design of the system comprises means for using the system definition
3 model to check whether the constraints are satisfied by the environment during
4 design of the system.

5
6 **30.** An apparatus as recited in claim 25, wherein the means for
7 facilitating management of the system comprises means for including, in a system
8 definition model, knowledge describing how to manage the system.

9
10 **31.** A system comprising:
11 a system definition model applicable across a lifecycle of an application,
12 wherein the lifecycle of the application includes design of the application,
13 deployment of the application, and management of the application; and
14 a schema to dictate how functional operations within the system definition
15 model are to be specified.

16
17 **32.** A system as recited in claim 31, wherein the system definition
18 model includes information describing how to deploy the application.

19
20 **33.** A system as recited in claim 31, wherein the system definition
21 model includes information describing how to deploy the application in multiple
22 different environments, and wherein the information includes different
23 information describing how to deploy the application in each of the multiple
24 different environments.

25

1 **34.** A system as recited in claim 31, wherein the system definition
2 model includes constraints that must be satisfied by an environment in order for
3 the application to be run in the environment.

4
5 **35.** A system as recited in claim 34, wherein the system definition
6 model can be used to check whether the constraints are satisfied by one or more
7 computing devices in the system during design of the application and during
8 management of the application.

9
10 **36.** A system as recited in claim 34, wherein the system definition
11 model can be used to check whether the constraints are satisfied by the
12 environment during design of the application.

13
14 **37.** A system as recited in claim 31, wherein the system definition
15 model includes information describing how to manage the application.

16
17 **38.** A system as recited in claim 31, wherein the system further
18 comprises:

19 another system definition model applicable across a lifecycle of an
20 environment, wherein the lifecycle of the environment includes design of the
21 environment, deployment of the environment, and management of the
22 environment; and

23 wherein the schema is further to dictate how functional operations within
24 the other system definition model are to be specified.

1 **39.** A system as recited in claim 38, wherein the system definition
2 model for the environment is derived through examination of the configuration of
3 one or more computing devices
4

5 **40.** A system as recited in claim 38, wherein the system definition
6 model includes constraints that must be satisfied by the environment in order for
7 the application to be run on the environment, and wherein the other system
8 definition model includes other constraints that must be satisfied by the
9 application in order for the application to be run on the environment.
10

11 **41.** A system as recited in claim 38, wherein the system further
12 comprises:
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14 an additional system definition model applicable across a lifecycle of an
15 additional environment, wherein the lifecycle of the additional environment
16 includes design of the additional environment, deployment of the additional
17 environment, and management of the additional environment;

18 wherein the additional environment is layered below the environment; and

19 wherein the schema is further to dictate how functional operations within
20 the additional system definition model are to be specified.
21

22 **42.** A method comprising:
23

24 defining an instance of a system definition model that is used during design
25 of a system, as well as in conjunction with a system definition model runtime
during deployment and management of the system.

1 **43.** A method as recited in claim 42, wherein the system definition
2 model includes information describing how to deploy the system.

3
4 **44.** A method as recited in claim 42, wherein the system definition
5 model includes information describing how to deploy the system in multiple
6 different runtimes, and wherein the information includes different information
7 describing how to deploy the system in each of the multiple different runtimes.

8
9 **45.** A method as recited in claim 42, wherein the system definition
10 model includes constraints that must be satisfied by the runtime in order for the
11 system to be run in the runtime.

12
13 **46.** A method as recited in claim 45, wherein the system definition
14 model can be used to check whether the constraints are satisfied by the runtime
15 during design of the system.

16
17 **47.** A method as recited in claim 42, wherein the system definition
18 model includes information describing how to manage the system in the runtime.
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